

TO STUDY & ANALYZE THE IMPACT OF CLOUD COMPUTING TECHNOLOGY ON ENTERPRISES PRODUCTIVITY, COST AND SECURITIES IN INDIA

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ABSTRACT

The Concept Of Cloud Computing Is Latest In India For The Enterprises. As An Outcome, Numerous Enterprises Are Still Puzzled To Accept And Execute It. Cloud Computing Is The Computation Of Saas And Utility Computing. It Propose Better Enhanced Computing Through Less Infrastructure Fees. The Majority Of The Enterprises Are Dropping Their Computing Cost Which Results In The Emergence Of Cloud Technology. This Research Paper Analyze The Impact Of Cloud Technology On Enterprises With Respect To Cost And Security. This Study Also Focus On The Merits And Demerits Of Executing Cloud Computing In Terms Of Cost And Data Security.

In Conclusion, We Can Say That Cloud Computing Is Superior For Intermediate And Miniature Sized Enterprises With Respect To Cost And Security.

KEYWORDS: Cloud Computing, Organizational Productivity, Cost and Security

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INTRODUCTION

As a metaphor for the Internet, "the cloud" is a familiar cliché, but when combined with "computing", the meaning gets bigger and fuzzier. Some analysts and vendors define cloud computing narrowly as an updated version of utility computing: basically virtual servers available over the Internet. Others go very broad, arguing anything you consume outside the firewall is "in the cloud", including conventional outsourcing.

Cloud computing comes into focus only when we want a ways to increase capacity or add capabilities on the fly without investing in new infrastructure, training new personnel, or licensing new software.

Today, IT must plug into cloud-based services individually, but cloud computing aggregators and integrators are already emerging. Cloud Computing has become one of the most popular technologies in recent times and has also got lots of attention from media as well as analysts because of the opportunities it is offering.

In a broader term, Cloud computing is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." - U.S. National Institute of Standards and Technology (NIST)

The Cloud computing means using a large number of computer servers through a network which appears as if they are one single coherent computer. The main objective behind opting for Cloud computing is to save huge costs on building IT infrastructure. This paper elaborates the evolution of Cloud computing and how the concept of

cloud computing has been adopted by various enterprises. This paper also explores on the technical description of the Cloud computing and its effect on enterprise in terms of cost & security.

As per a Forrester Report (Dec 2008) more than 70% of IT budget is spent on maintenance of current IT infrastructure instead of adding new one. The theory includes Infrastructure as a service (IaaS), Software as a service (SaaS), Platform as a service (PaaS) and Web 2.0 having the regular idea of depending on the net for fulfilling the computing requests of the client

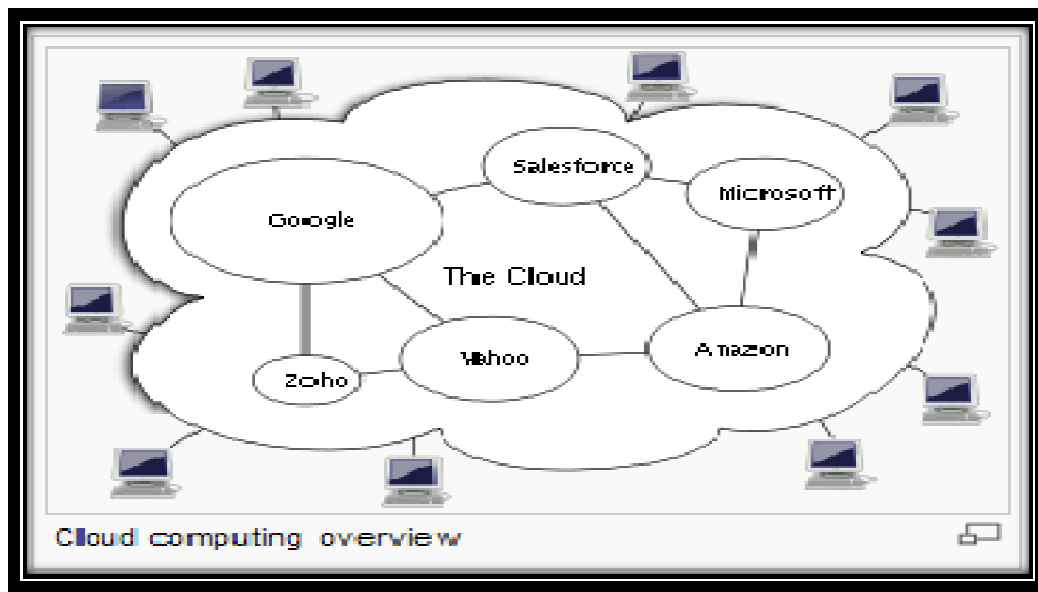


Table 1: Cloud Computing Technology

REVIEW OF LITERATURE

Borko Furht's instruction book on "Cloud Computing" introduces the tools and services of the cloud computing's service providers. The fundamental idea of cloud computing and its applications are also introduced. Architecting the Cloud by Mike Kavis is an expert guide for selecting the right cloud service model for the business. Cloud Computing for Libraries by Marshall Breeding reveals how to harness the power of the cloud through well-known services such as Amazon Web Services and Dura Cloud and even how to use Google App Engine to create your own cloud applications. Mastering Cloud Computing: Foundations and Applications Programming by Rajkumar Buyya is designed for undergraduate students learning to develop cloud computing applications. The book introduces the principles of distributed and parallel computing underlying cloud architectures and specifically focuses on virtualization, thread programming, task programming, and map-reduce programming. Venkata Josyula's book explains the fundamentals of cloud computing to fresher's as well as PaaS and SaaS concepts and guidance to professionals. This book's replicable solutions and fully-tested best practices will help enterprises, service providers, consultants, and Cisco partners meet the challenge of provisioning end-to-end cloud infrastructures.

OBJECTIVES OF THE STUDY

- To study and analyze the effect of cloud computing technology on an Enterprise organizational productivity.
- To study and analyze the factors which encourage an enterprise from opting cloud computing technology, i.e. Cost & Security.

- To study and analyze the factors which discourage an enterprise from opting cloud computing technology.

HYPOTHESIS

H00: There is no significant impact of cloud computing on enterprise organizational productivity.

H01: There is a significant impact of cloud computing on enterprise organizational productivity.

H01: Size of organization does not restrict the use of cloud computing system.

H11: Size of organization restricts the use of cloud computing system.

H02: There is no significant over-all growth of organization after adopting Cloud Computing Technology.

H12: There is a significant over-all growth of organization after adopting Cloud Computing Technology

RESEARCH METHODOLOGY

The data will be collected by means of structured questionnaire a. Both primary data and secondary data will be used to collect the information. Convenience sampling has been administered for this survey, where Sample size for the survey was 30 organizations using cloud computing technology. The purpose of the research is to find out the benefits and drawbacks with respect to cost, data security and data availability;

RESULTS AND DISCUSSIONS

Part A- Demographic Analysis

The results were derived after analyzing the samples, where demographic factors has been presented in a tabular form which is showing the no of employee in sample organization and a bar chart is also mentioned for the pectoral presentation. So in table 1, the category 50-249 is having highest frequency which was 13.

Table 1: Employee Number

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-49	9	29.0	29.0	29.0
	50-249	13	41.9	41.9	71.0
	250 above	9	29.0	29.0	100.0
	Total	31	100.0	100.0	

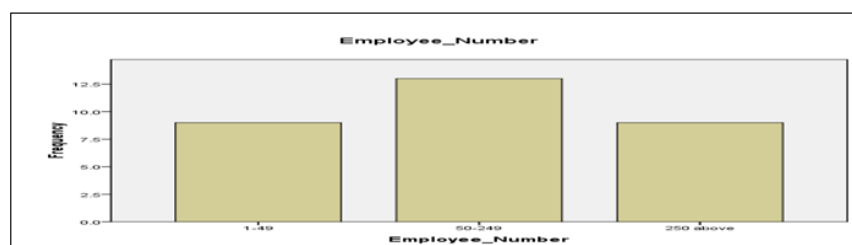


Figure 1

Category of the organization are mentioned in table 2 and manufacturing is representing the 2nd highest vertical and pectoral representation is also been given for the same. “Other” category, representing various verticals related to healthcare and small industries stood first in researcher data collection.

Table 2: Sector

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ICT	1	3.2	3.2	3.2
	Manufacturing	8	25.8	25.8	29.0
	Trade	5	16.1	16.1	45.2
	Financial Services	5	16.1	16.1	61.3
	Government	2	6.5	6.5	67.7
	other	10	32.3	32.3	100.0
	Total	31	100.0	100.0	

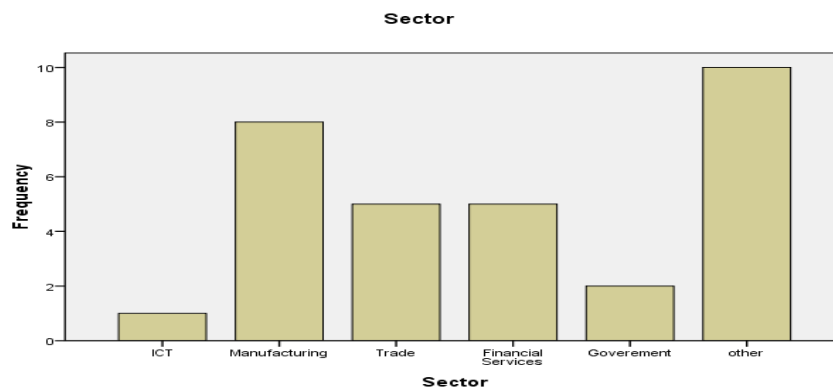


Figure 2

In table 3, The nature of organization has been categorized according to their modus of operandi where three formats has been identified like Local company, Local company with the foreign affiliates and third, Part of an International business listed where 2nd category has the highest frequency which is 12 in data analysis.

Table 3: Type of Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Local Company	9	29.0	29.0	29.0
	Local company with the foreign affiliates	12	38.7	38.7	67.7
	Part of an international	10	32.3	32.3	100.0
	Total	31	100.0	100.0	

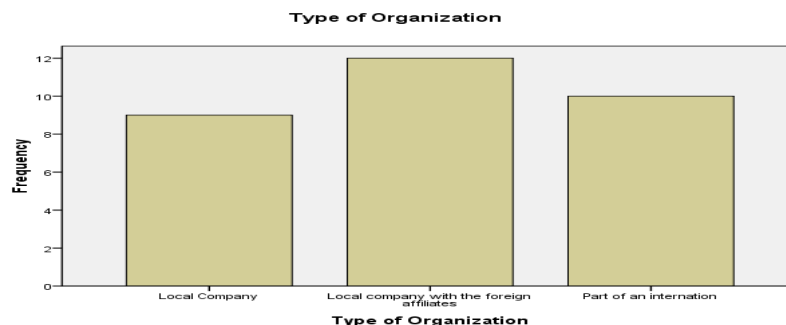


Figure 3

Part B- Hypothesis Testing

The first hypothesis which was formulated was to prove that whether Cloud computing technology have any significant affect on organization productivity, so cross tab has been applied between expenditure and productivity gained by organization after adopting the Cloud Computing technology, so the statistical analysis is showing that Null hypothesis stands rejected, where chi square value is less than .05 alpha value and hence alternative hypothesis is clearly evident.

Table 4: Chi-Square Tests: Crosstab between Productivity and Expenditure

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.424^a	15	.156
Likelihood Ratio	24.310	15	.060
Linear-by-Linear Association	7.108	1	.008
N of Valid Cases	31		
a. 24 cells (100.0%) have expected count less than 5. The minimum expected count is.13.			

In order to understand whether size of the organization is a concern to adopt cloud computing technology, the hypothesis was formulated and analyzed by applying chi square tools, where null hypothesis got rejected and alternative hypothesis accepted that size of the organization played an important role in adaptation of cloud computing technology.

Table 5: Chi-Square Tests: Cross Tab between Size of Organization and Adoption

	Value	Df	Asymp. Sig. (2-Sided)
Pearson Chi-Square	23.951^a	10	.008
Likelihood Ratio	27.045	10	.003
Linear-by-Linear Association	6.045	1	.014
N of Valid Cases	31		
a. 18 cells (100.0%) have expected count less than 5. The minimum expected count is.58.			

In the third hypothesis, Paired sample t-test was applied to understand the pre and post Cloud Technology impact on organization overall growth, at .076 significance level, T-test clearly showing that organization got improved overall growth after adopting cloud Technology.

Table 6: Paired Samples Test

		Paired Differences					t	df	Sig. (2-Tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Overall growth before adopting Cloud computing – overall growth after adopting cloud computing	-1.00000	3.03315	.54477	-2.11257	.11257	-1.836	30	.076

CONCLUSIONS

Finally concluding the that Cloud computing technology is cost effective and a need of organization expansion plan where it helps in overall growth of the organization, The future study in this area could bring more insight to help organization to take better decisions.

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